

CLAIMS

What is claimed is:

1. A mirror assembly comprising:
a mounting structure including a cylindrical mounting member (50)
5 having a top surface (56), said top surface (56) including a plurality of détentes (58)
having ramped side edges (60); and
a foldable structure including an internal bore (38), said internal bore
including a mounting portion that accepts the cylindrical mounting member (50), said
mounting portion including a plurality of recesses having angled edges (64) that
10 accept the détentes (58), said foldable structure being rotatable on the mounting
member (50), wherein an angle β_1 of the ramped edges of a short radius r_1 end of
each détente has a steeper angle than an angle β_2 of the ramped edges (60) of a
long radius r_2 end of each détente.
- 15 2. The mirror assembly according to claim 1 wherein the relationship of
the angle of the ramped edges (60) of the détentes (58) is defined by $\beta_2 = \tan^{-1}(r_1/r_2) \tan(\beta_1)$.
3. The mirror assembly according to claim 1 further comprising a pivot
20 tube (30) extending through the bore (38) and being partially positioned within the
mounting member (50) and a pivot spring (32) positioned within the bore (38), said
structure pivoting on the pivot tube against the bias of the spring (32).
4. The mirror assembly according to claim 1 wherein the plurality of
25 détentes (58) is three symmetrically disposed détentes.

5. The mirror assembly according to claim 1 wherein the ramp angle of the ramped edges changes gradually and continuously from the ramp angle β_1 to the ramp angle β_2 .

5 6. The mirror assembly according to claim 1 wherein a top planar surface of each détente has a substantially constant width through the entire length of the détente.

7. The mirror assembly according to claim 1 wherein the mounting
10 structure and the foldable structure are plastic molded components.

8. The mirror assembly according to claim 1 wherein the mirror assembly is a vehicle side mirror assembly.

15 9. A vehicle side mirror assembly comprising:
a mounting bracket including a cylindrical mounting member (50) having a top surface, said top surface including three symmetrically disposed détentes (58) having ramped side edges;

a foldable housing including an internal bore (38), said internal bore
20 including a mounting portion that accepts the cylindrical mounting member (50), said mounting portion including three symmetrically disposed recesses (64) having angled edges that accept the détentes, said housing being rotatable on the mounting member; and

a pivot tube (30) extending through the bore (38) and being partially
25 positioned within the mounting member (50), said housing pivoting on the pivot tube (30), wherein an angle β_1 of the ramped edges of a short radius r_1 end of each détente (58) has a steeper angle than an angle β_2 of the ramped edges of a long

radius r_2 end of each détente, and wherein the relationship of the angle of the ramped edges of the détentes is defined by $\beta_2 = \tan^{-1}(r_1/r_2)\tan(\beta_1)$.

10. The mirror assembly according to claim 9 wherein the ramp angle of
5 the ramped edges changes gradually and continuously from the ramp angle β_1 to the ramp angle β_2 .

11. The mirror assembly according to claim 9 wherein a top planar surface
of each détente has a substantially constant width through the entire length of the
10 détente.

12. The mirror assembly according to claim 9 wherein the mounting
bracket and the foldable housing are plastic molded components.

15 13. A method of folding a mirror assembly, said method comprising:
providing a mounting bracket including a cylindrical mounting member
(50) having a top surface (56), said top surface (56) including a plurality of détentes
(58) having ramped side edges (64) wherein an angle β_1 of the ramped edges of a
short radius r_1 end of each détente has a steeper angle than an angle β_2 of the
20 ramped edges of a long radius r_2 end of each détente;
providing a housing structure including an internal bore (38), said
internal bore (38) including a mounting portion that accepts the cylindrical mounting
member (50), said mounting portion including a plurality of recesses (64) having
angled edges that accept the détentes;
25 providing a pivot tube (36) extended through the bore (38) and being
partially positioned within the mounting member; and

rotating the housing structure on the pivot tube (36) and the mounting member so that the edges of the détentes (58) push against corresponding edges of the recesses along the entire length of the edges of the détentes (58).

5 14. The method according to claim 13 wherein providing a mounting bracket includes providing a relationship of the angle of the ramped edges the détentes defined by $\beta_2 = \tan^{-1}(r_1/r_2)\tan(\beta_1)$.

10 15. The method according to claim 13 wherein providing a mounting bracket includes providing three symmetrically disposed détentes (58).

15 16. The method according to claim 13 wherein providing a mounting bracket includes providing the ramp angle of the ramped edges that changes gradually and continuously from the ramp angle β_1 to the ramp angle β_2 .

17. The method according to claim 13 wherein the mounting bracket and the housing structure are plastic molded components.